DETAILED OFFICE ACTION

1.   Claims 1-2 are pending in Application 10/559,744. Claims 3-4 have been
cancelled.

Specification

2.   The lengthy specification has not been checked to the extent necessary to
determine the presence of all possible minor errors. Applicant's cooperation is
requested in correcting any errors of which applicant may become aware in the
specification.

Claim Objections

3.   Claims 1-2 have been objected to under C.F.R. 1.75 because of the following
informalities:

   Regarding claim 1, the term "an ACK packet" on line 14 should be changed to
"the ACK packet".   Appropriate correction is required.

   Regarding claim 2, the term "ACK packet" on line 3 should be added after the
words "a newly generated." Appropriate correction is required.

Claim Rejections - 35 USC § 112

4.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

   The specification shall conclude with one or more claims particularly pointing out and distinctly
   claiming the subject matter which the applicant regards as his invention.

5.   Claims 1-2 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite
for failing to particularly point out and distinctly claim the subject matter which applicant
regards as the invention.

6.   Claim 1 recites the limitation "a calculator that calculates an ACK packet

generation interval based on the size of the ACK packet and the channel rate of the

transmission channel" in line 7 which renders the claim as vague. It is unclear whether

the applicant requires both parameters to satisfy the condition to calculate an ACK

packet generation interval or just the size of the ACK packet.

7.   Claim 2 recites the limitation "a counter" which renders the claim as vague. It is

unclear whether applicant is referring to "a counter" recited in line 10 of claim 1 or a

second counter.

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

9.   The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating
        obviousness or nonobviousness.

10.   This application currently names joint inventors. In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

11.   Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Applicants Admitted Prior Art (AAPA) in view of Trainin (US 2004/0120292) in view of

Want et al. (US 5,721,725) in view of Diepstraten et al. (US 6,707,867).

        Regarding claim 1, AAPA discloses a packet communication apparatus that

receives a data packet through a high speed receiving channel and transmits on a low

speed transmitting channel on asymmetrical packet channels **(see paragraph 0004,**

line 1-8, [the mobile terminal is the apparatus that receives data packets on the

downlink channel and transmits an ACK packet on the uplink channel in

response to the data packet]) comprising a transmitter that transmits the ACK packet

to the transmission stage **(see Figure 4, Data Packet Receiver 1221 [the receiver**

transmits the ACK packet to the Transmission Buffer 1240 via IP Section 1210]).

AAPA does not disclose a holder that holds a size of the ACK packet and a channel rate

of the transmitting channel. However, Trainin discloses such a feature **(see paragraph**

**0076, lines 8-14 [the receiver stores the rate and the length of the ACK to be
transmitted]).**

Therefore, it would have been obvious to one of ordinary skill in the art at the
time the invention was made to implement the method of Trainin into the system of
AAPA. The method of Trainin can be implemented by enabling the Data Packet
Receiver of AAPA to store information such as the ACK length and the data rate. The
motivation for this is enable the mobile terminal to determine how many
acknowledgements can fit into one ACK Packet based on the length and the data rate
of the uplink channel, thus producing a more efficient system.

The references as combined above do not disclose a calculator that calculates
an ACK generation interval based on the size of the ACK Packet and the channel rate
of the transmission channel. However, Want et al. discloses such a feature **(see
column 7, lines 26-29 [transceiver W calculates the time of transmission based on
the data length and the date rate which inexplicitly includes the time for packet
generation]).**

Therefore, it would have been obvious to one of ordinary skill in the art at the
time the invention was made to implement the method of Want et al. into the mobile
device of the references as applied above. The method of Want et al. can be
implemented by coupling Transceiver W and the Data Packet Receiver. The motivation
for his is to enable the mobile terminal to calculate the time of transmission of the ACK
packet based on the data length and the data rate, thus producing a more efficient
system.

The references as applied above do not disclose a counter that repeats counting the calculated interval and outputs an expiration signal every time the period expires. However, Diepstraten et al. discloses such a feature **(see column 4, lines 57-61 [modulo n counter functions as a timer and triggers function generator 24 by way of an interrupt signal indicating that the next packet should be constructed and transmitted])**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Diepstraten et al. into the mobile terminal of the references as applied above. The method of Diepstraten et al. can be implemented by coupling the modulo n counter between the transceiver W and the Data Packet Receiver. The motivation for this is to enable the Transceiver W to calculate the generation time of the ACK packet and set the modulo n counter to the generation time so that the modulo n can send out an interrupt signal to the Data Packet Receiver to indicate that the next ACK packet should be constructed and transmitted, thus producing a more efficient system. Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces/market place incentives if the variations are predictable to one of ordinary skill in the art.

Conclusion

12.   Claim 2 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER T. WYLLIE whose telephone number is (571) 270-3937. The examiner can normally be reached on Monday through Friday 8:30am to 6:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on (571) 272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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